

STORAGE AND DISTRIBUTION OPTIONS

Storage is the most critical part of the RIDS. Storage will be necessary in the future to optimize current sources and to balance supply and demand, especially for supplemental sources such as surface water.

The potential storage options include surface reservoirs, above ground storage tanks and ASR systems. The need to store large volumes of water lends itself more to ASR than the constructed storage infrastructure options. From a cost standpoint ASR will be much more feasible than the other options. Also, ASR has become acceptable in the regulatory environment.

The feasibility of constructing a lined surface reservoir was evaluated in the Cape Coral area. The following presents the criteria and estimated costs:

- Reservoir Area: 100 Acres
- Reservoir Depth: 12 feet
- Available Storage: 390 MG
- Pump Intake Depth: 10 feet
- Effective Storage (Not Accounting for Evaporation): 325 MG
- Net Evaporation Losses for 180 Day Period: 35 MG
- Corrected Effective Storage: 290 MG
- Land Acquisition Costs (\$12,500/Acre for 160 Acres (allowing for wetlands)): \$ 2,000,000
- Earth Work Costs: \$ 3,600,000
- Lining Cost: \$ 3,500,000
- Pumping System and Pipeline Costs: \$ 500,000
- Total Costs: \$9,500,000

A 201 facilities plan update for Collier County evaluated a surface reservoir. It concluded that 82 acres of land would be required to store 140,000,000 gallons. The resulting cost was estimated at \$14,000,000.

An ASR system with 290 MG of storage capacity (assumes 80% recovery efficiency and includes 3 ASR wells and pumping and treatment facilities) would cost approximately \$2,000,000.

Land costs and permissibility due to environmental issues make constructed storage systems unfeasible. As shown, the relative cost for a reservoir versus an ASR system would be approximately five times greater or more.

The potential locations of five possible reclaimed water and 10 surface water ASR systems are shown on Figure 27 and quantified in Table 19. A minimum distance of two miles from existing and permitted future municipal reverse osmosis (RO) supply wells and potable water ASR systems was used in the site selection process. Also, a semi-regional approach for reclaimed water ASR systems

was utilized in order to maximize the recharge capacity of such systems while also providing some flexibility in siting.

LEGEND:

- Potable Water ASR-Floridan Aquifer
 1. LCU-North Reservoir
 2. LCU-Olga
 3. Fort Myers-Winkler Avenue
 4. BSU-San Carlos Estate
 5. Collier County-Manatee Road
- Surface Water ASR-Floridan Aquifer
 6. FWS-Marco Lakes
- Possible Surface Water ASR Sites
 7. Golden Gate Canal-17th Ave.
 8. Golden Gate Canal-Airport Road
 9. Faka Union Canal
 10. Cocohatchee River
 11. Henderson Creek Canal
 12. Imperial River/Kehl canal
 13. Ten Mile Canal
 14. Gator Slough
 15. Horseshoe Canal
 16. Hermosa Canal
- Possible Reclaimed Water ASR Sites
 17. Everest Pkwy./Waterway Estates/N. Fort Myers
 18. Fort Myers (Central & South)/Gateway/Lehigh Acres
 19. Fiesta Village/Fort Myers Beach/GES
 20. N. Collier/Pelican Bay/BSU
 21. Naples/S. Collier/Marco Island
- Mule Pen Quarry
- Wellfields (Floridan Aquifer only)
 - A. Sanibel
 - B. Pine Island
 - C. Cape Coral
 - D. Marco Island
 - E. Collier County North RO
 - F. City of Fort Myers RO
- Coast Line
- Major Roads
- County Boundary
- Water

10 0 10 20 Miles

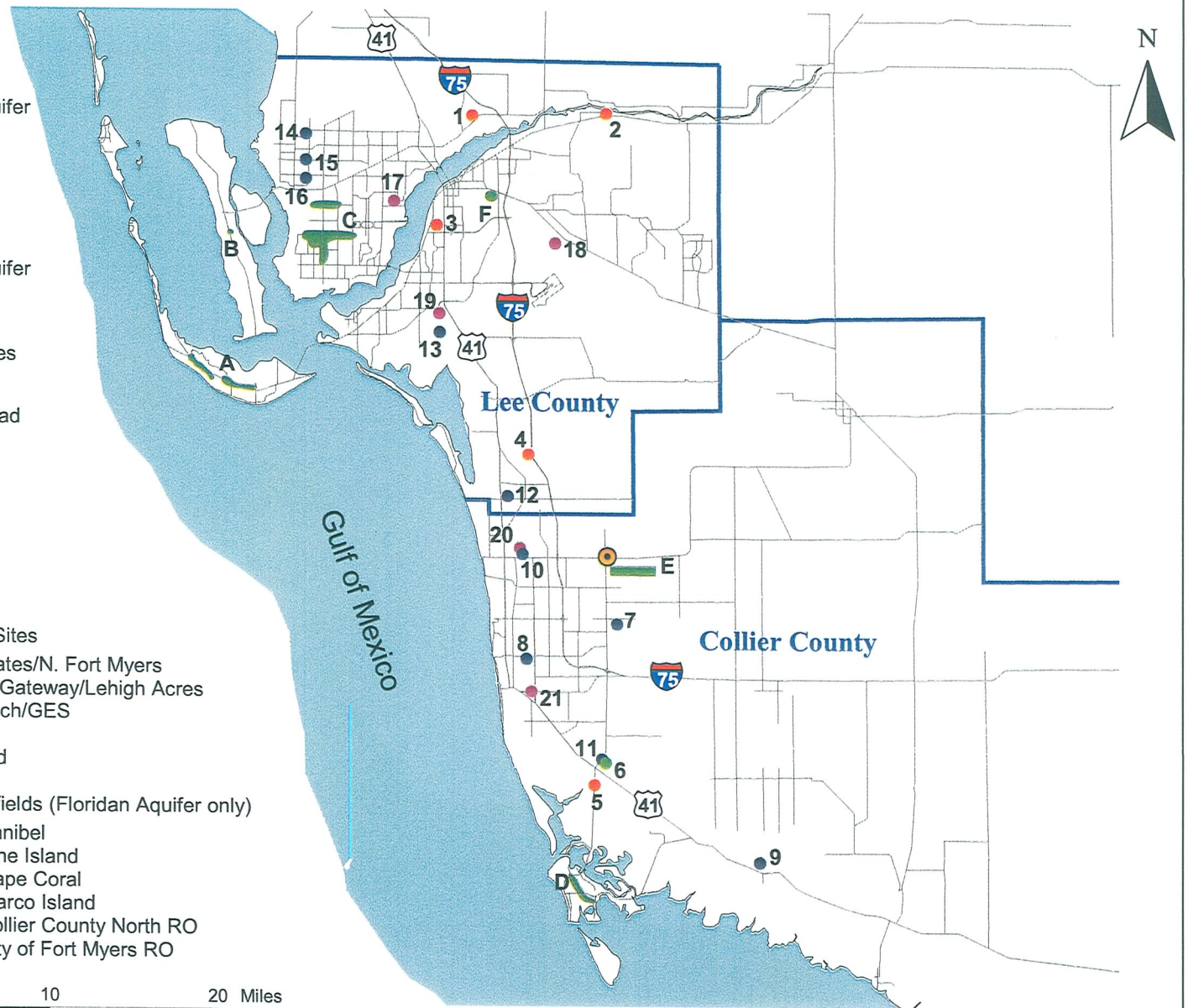


Table 19
Summary of Potential ASR Systems

Irrigation Supply Source	General Location	Potential Dry Season ASR Recovery (MGD)²	Number of Wells	Type
Caloosahatchee River	S-79	25	35	Surface Water ASR
Golden Gate Canal System	17 th Ave SW	20	27	Surface Water ASR
Golden Gate Canal System	Airport Rd.	25	34	Surface Water ASR
Faka Union Slough	0.5 miles north US 41	25	34	Surface Water ASR
Cocohatchee River	Willoughby Acres bridge	5	7	Surface Water ASR
Imperial River*	Orr Rd.	15	20	Surface Water ASR
Henderson Creek Canal	Near US 41	7	10	Surface Water ASR
Ten Mile Canal	1.05 mi north of Alico Rd	12	16	Surface Water ASR
Gator Slough	Near SR 765	7	10	Surface Water ASR
Hermosa Canal	Near SR 765	3	4	Surface Water ASR
Horseshoe Canal	Near SR 765	3	4	Surface Water ASR
Naples WWTP/South Collier/Marco Island Regional	To be Determined	7.5	10	Reclaimed Water ASR
North Collier/Pelican Bay/BSU Regional	To be Determined	4	6	Reclaimed Water ASR
GES/Fiesta Village/Ft. Myers Beach Regional	To be Determined	5	7	Reclaimed Water ASR
Everest/Waterway Estates/North Ft. Myers Regional	To be Determined	2	3	Reclaimed Water ASR
Ft. Myers Central/Ft. Myers South/Gateway/Lehigh Acres Regional	To be Determined	9	12	Reclaimed Water ASR

* = No salinity control structure